

Evaluation of the Use of Visual Storytelling as an Educational Intervention in the CICU

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BACKGROUND

Children and their parents often experience anxiety and traumatic stress after intensive care unit admissions and cardiac surgeries that can persist for years^{1,2}.

Providing information and expectations during ICU admissions has been shown to reduce parental stress and anxiety, but data on preventative interventions are lacking³.

VISUAL STORYTELLING

Key Elements of Visual Storytelling include:

- Involves the use of images and text in the form of comics or animation to tell a story.
- Enhances understanding and increases recall through the use of images and text to activate different processing pathways.
- Contains unspoken subtext that can trigger visceral reactions that cannot be conveyed by text alone.
- Suitable for both pediatric patients and families.

METHODS

Design: Cross-sectional study of families admitted to the Cardiac ICU from April 2020 to March 2021 for first cardiac surgery. Parents were sent two videos and an online survey to evaluate:

- Video design
- Quantity of information
- Format
- Relevance of information
- Emotional responses
- Parental empowerment in child's care
- Usefulness in improving CICU experience and reducing stress

Quantitative thresholds for safety and acceptability set *a priori*.

REFERENCES

1. Nelson, LP, Gold, JI. PhD Posttraumatic stress disorder in children and their parents following admission to the pediatric intensive care unit, *Pediatr Crit Care Med*. 2012;13(3):338-347.
2. Franck, LS, Mcquillan, A, Wray, J, et al. Parent Stress Levels During Children's Hospital Recovery After Congenital Heart Surgery. *Pediatr Cardiol*. 2010;31:961-968.
3. Als LC, Nadel S, Cooper M, Vickers B, Garraida ME. A supported psychoeducational intervention to improve family mental health following discharge from paediatric intensive care: feasibility and pilot randomised controlled trial. *BMJ Open*. 2015;5(12):1-8. PMID: 26715482.

EDUCATIONAL VIDEOS

Educational Video 1: Introduction to the CICU

Sophia and her family are introduced to the CICU environment and team members prior to cardiac surgery.

Parental empowerment is an important theme throughout. "As a parent you're not considered a visitor, but rather an important part of the care team!"

Educational Video 2: What to Expect after my Child's Surgery

Information on medical devices, medications, monitoring, and goals for transition to the floor are discussed.

Interventions in the CICU:

- Monitors
- Breathing tube
- Chest tubes
- Pacing wires
- Medications
- Blood transfusions

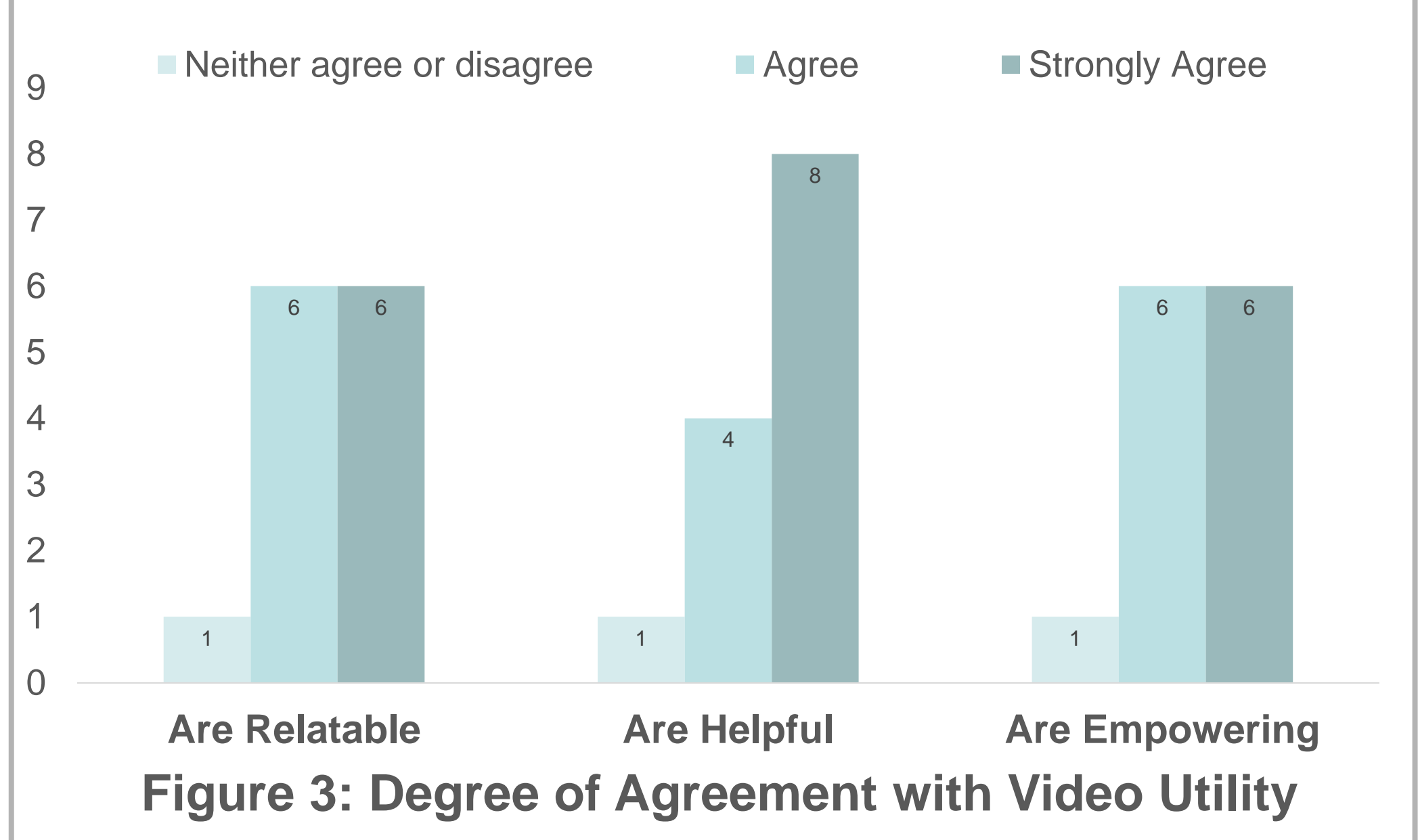
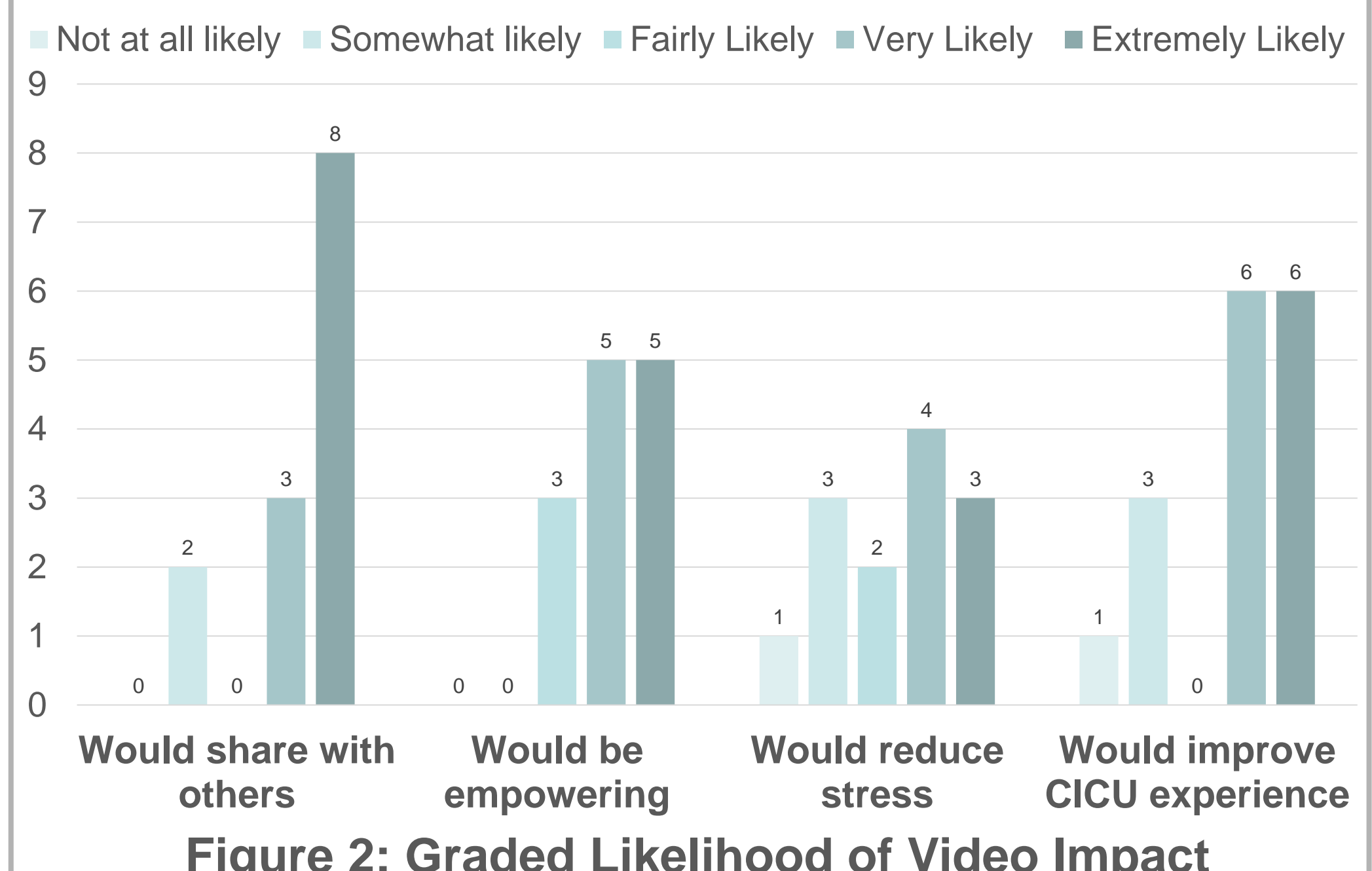
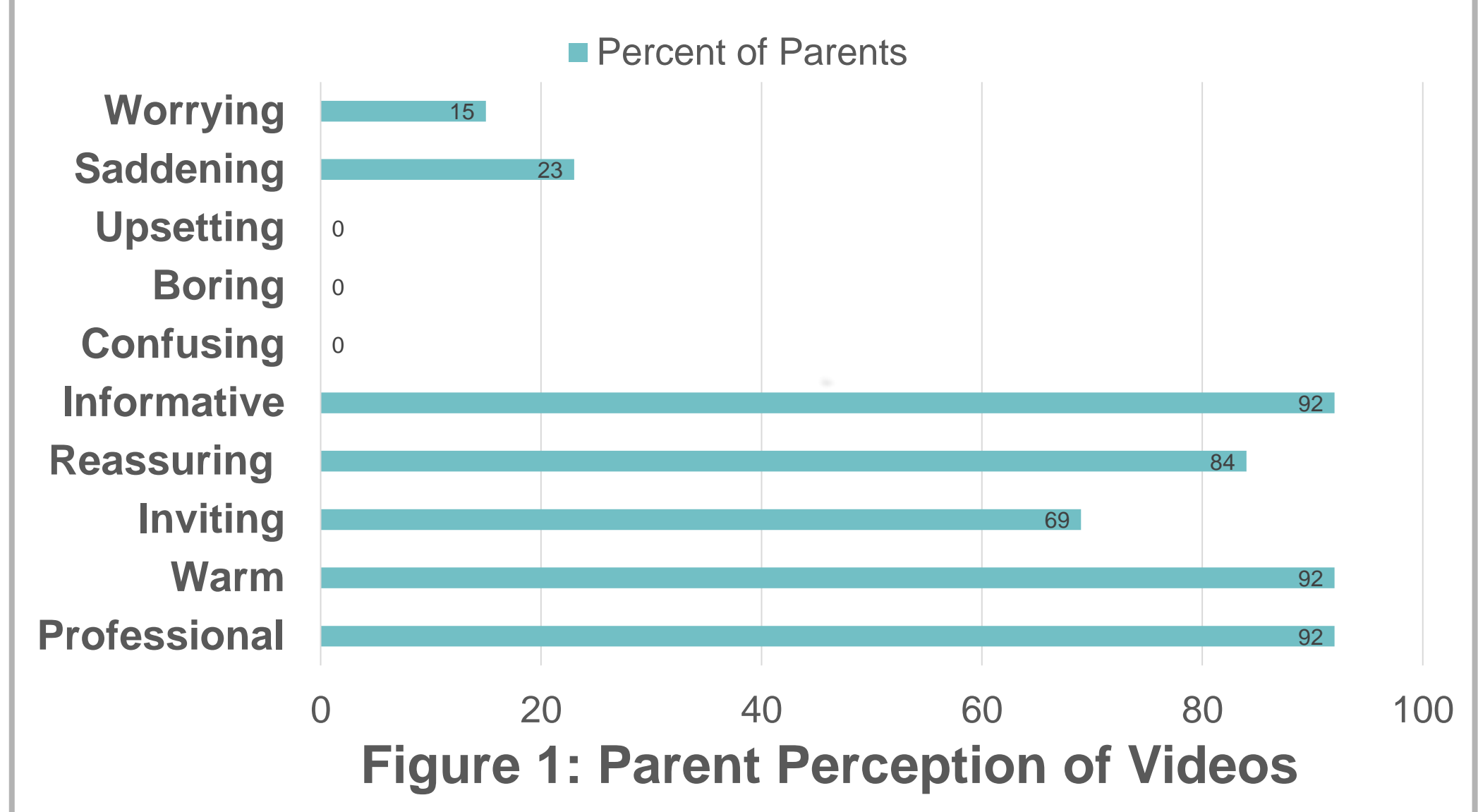
Outline goals for transfer to the floor such as:

- Off ventilator, but still may need oxygen
- Off continuous medications
- No heart rhythm problems that need close monitoring
- No longer needing second to second observation

SURVEY RESULTS

Table 1. Sample Demographic Characteristics

	Families that Completed Survey (n=16)	Non-Participating Families (n=13)	P- value
Average Age of Child at Surgery (months)	20.74	34.03	0.7
Presence of Co-Morbidities	50%	46%	>0.9
STAT Category (1-5)	3.19	3.00	0.7
Insurance Type:			0.011
- Private	56%	7.7%	
- Medicaid	31%	92%	
- Other (Military or Self Pay)	12.4%	0%	



QUALITATIVE THEMES: POSITIVE ASPECTS

Captured Parent Experiences

"It really explains step-by-step what was going to happen and how you are going to get through it and all the people that were going to help you"

Emotional Benefits

"This would have made me feel less anxious for sure at already a very stressful time. The calmness of the video and all of the information was great at making me feel everything was going to be ok"

Sharing with Others

"It would be helpful to explain some things to extended family in a way that would inform, but not scare them"

QUALITATIVE THEMES: IMPROVEMENTS

Remove Extra Dialogue

"The [first] video seemed to be filled with more family script lines than necessary."

Make More Realistic

"I would include more illustrations that make it more like what they would actually see - a busy room with lots of machines and medicines."

Less Cheerful

"They do not show how scary post surgery can feel for parents."

COVID Version Needed

"There should be a COVID times version with limited family members, face masks, etc."

CONCLUSIONS

This pilot study provides preliminary evidence demonstrating that the use of visual storytelling with parents of children previously admitted to the CICU is perceived as:

- Safe
- Informative
- Empowering
- Effective tools to introduce the CICU, set expectations, and outline goals for transfer
- Helpful at reducing stress and improving CICU experiences

FUTURE DIRECTIONS

1. Refine videos in accordance with participant feedback and family engagement.
2. Test the refined videos in a larger sample of families previously admitted to the CICU.
3. Undertake a randomized controlled trial to test the effects of the intervention on parental empowerment, stress, and experience when viewed prior to CICU admission.